

REMARKS**I. INTRODUCTION**

In response to the Office Action dated November 2, 2004, no claims have been canceled, amended or added. Claims 1-27 remain in the application. Re-examination and re-consideration of the application is requested.

II. PRIOR ART REJECTIONS**A. The Office Action Rejections**

On page (2) of the Office Action, claims 1-7 and 10-16 were rejected under 35 U.S.C. §102(e) as being anticipated by Fisher, U.S. Patent No. 6,331,858 (Fisher). On page (5) of the Office Action, claims 8, 17, and 26 were rejected under 35 U.S.C. §103(a) as being unpatentable over Fisher in view of Schmeidler et al., U.S. Patent No. 6,374,402 (Schmeidler). Also on page (5) of the Office Action, claims 9, 18, and 27 were rejected under 35 U.S.C. §103(a) as being unpatentable over Fisher in view of Berger, U.S. Patent No. 6,414,693 (Berger).

Applicant's attorney respectfully traverses these rejections.

B. The Applicant's Independent Claims

Independent claims 1, 10, and 19 are generally directed to synchronizing data between a graphical client and a server. Claim 1 is representative, and comprises the steps of:

(a) downloading one or more root object nodes of a scene from the server to the graphical client, wherein the scene is a collection of parameter values for rendering a model;

(b) intersecting bounding volumes for the object nodes with a view frustum in the graphical client to determine a set of visible and undefined object nodes, wherein the view frustum comprises the part of the model between cutting planes defined by the scene; and

(c) downloading the object nodes in the set of visible and undefined object nodes from the server to the graphical client, wherein the graphical client renders the scene from the object nodes.

C The Fisher Reference

Fisher describes a user interface on a display terminal, such as a personal computer, includes a 3D display region which shows a scene incorporating a number of objects, such as items of furniture. A surface finish selector is also displayed and is used to select a surface finish from a number of alternatives. In the case of items of furniture, these finishes may correspond to different

fabrics for upholstery. A surface texture data for a selected finish is automatically downloaded from a remote source and mapped onto the object in the 3D scene. In a preferred implementation, the surface finish selector is a frame of a web page and generates control data which is passed to another frame containing the 3D scene together with movement controls for changing the viewpoint in the scene.

D. The Schmeidler Reference

Schmeidler describes a system for secure delivery of on-demand content over broadband access networks includes a client application executing on a user's local computer system. The client application interacts with a content server on which a plurality of selectable titles are stored and further interacts with an access server which provides the network address of a title and keying data necessary for the client process access and execute the title. The client process utilizes an installation abstraction which enables a title to be executed on the local computer system without ever being installed. The abstraction is achieved by mounting a network file system and storing a set of registry entries related to the title on the local computer system. Portions of the title are retrieved from the content server and executed by the local operating system. During title execution, requests from the local operating system are intercepted and redirected to the set of registry entries, as applicable. The times at which the client process may retrieve the title data from the content server are defined by the access server through use of an activator and token.

E. The Berger Reference

Berger describes a system and method for customizing articles on a computer-based display provides a supplier database and remote client computer. Data is transferred between the supplier and the client computer including predetermined images of client articles and accompanying images of custom graphics. The database stores information on a variety of clients. Each client is associated with one or more profile, and each profile includes a series of images associated therewith. The client logs in under a given profile user name and password, and selects desired article images, and then calls up associated graphic images to manipulate onto the article images, creating a desired appearance. This appearance can be resubmitted to the supplier for production of an actual physical sample of the article.

F. The Applicant's Invention is Patentable Over the References

The Applicant's invention, as recited in independent claims 1, 10 and 19, is patentable over the references, because it contains limitations not taught by the references.

The Office Action cites Fisher as disclosing the limitation of "downloading one or more root object nodes of a scene from the server to the graphical client" at col. 3, lines 14-40, which is set forth below:

Col. 3 lines 14-40

A display terminal comprises a personal computer 1. The personal computer includes a cathode ray tube (CRT) monitor 2 and a mouse 3. In this example, the personal computer includes an Intel 166 MHz Pentium MMX (Trademark) processor, together with regions of RAM and a hard disk mass storage device. The personal computer is connected via modem 4 and the PSTN (public switched telephone network) to an Internet Service Provider (ISP). A web browser, such as Microsoft Corporation's Internet Explorer (Trademark) runs on the processor of the personal computer 1, and in combination with the plug-in application described below, is responsible for generating a display on the monitor, and for interpreting input from the user. Using the web browser, the user accesses a web server 6 which, in this example, is maintained by a furniture retailer, and includes a product catalogue. The web server 6 then returns to the web client on the personal computer 1 a web page which has the format illustrated in FIG. 2. In this Figure, the different file names are included for ease of understanding, although normally such file names would not appear explicitly in the display. The top level document returned by the server 6 is, in this example, a file named BT.htm. This HTML file includes in turn two other web pages. A first web page, pinefin5.htm is displayed in a frame on the right hand side of the screen. This page includes a 3-dimensional virtual reality display of a domestic interior.

The above portions of Fisher do not teach or suggest the limitation of Applicant's claims, which comprises "downloading one or more root object nodes of a scene from the server to the graphical client, wherein the scene is a collection of parameter values for rendering a model." Indeed, Fisher does not teach or suggest object nodes, object nodes that relate to a scene, or object nodes that are downloaded from a server to a graphical client, or data must be synchronized between a graphical client and a server. Instead, the cited location in Fisher merely relates to the display of web pages that reference other pages.

The Office Action cites Fisher as disclosing the limitation of "intersecting bounding volumes for the object nodes with a view frustum in the graphical client to determine a set of visible and undefined object nodes" at col. 5, lines 15-25, which is set forth below:

Col. 5, lines 15-25

FIG. 3 shows the screen display in the first example described above. A frame F1 on the left hand side displays a number of 2D fabric samples s1-s6. The frame is bounded by a scroll bar SB. On the right hand side of the screen, a frame F2 includes the 3D scene generated by the Viscape plug-in. The displayed objects include a curtains 301, chair 302 and carpet 303. Control buttons 305, 306, 307 move the viewpoint in 3 dimensions with respect to the scene, which changes correspondingly as the viewpoint moves.

FIG. 4 is a diagram showing an enlarged detail of the left hand frame.

The above description in Fisher does not teach or suggest the limitation of Applicant's claims, which comprises "intersecting bounding volumes for the object nodes with a view frustum in the graphical client to determine a set of visible and undefined object nodes, wherein the view frustum is the part of the model between cutting planes defined by the scene." Indeed, Fisher does not teach or suggest "bounding volumes," or "a view frustum," or "a set of visible and undefined object nodes," or "intersecting bounding volumes for the object nodes with a view frustum in the graphical client to determine a set of visible and undefined object nodes." Instead, the cited location in Fisher merely describes "displayed objects" that are curtains, chairs and carpets.

The Office Action asserts that it is inherent when the user navigates the view to the right or the left, some objects would become or stay visible, and some objects would become or stay undefined.

This assertion is unsupported. Certainly, there is nothing "inherent" in Fisher that would teach or suggest "intersecting bounding volumes for the object nodes with a view frustum in the graphical client to determine a set of visible and undefined object nodes, wherein the view frustum is the part of the model between cutting planes defined by the scene." Instead, the only thing "inherent" and related in Fisher is that control buttons 305, 306, 307 move the viewpoint in 3 dimensions with respect to the scene, which changes correspondingly as the viewpoint moves.

Finally, the Office Action cites Fisher as disclosing the limitation of "downloading the object nodes in the set of visible and undefined object nodes from the server to the graphical client" at col. 4, lines 62-65 and col. 5, lines 10-14, which are set forth below:

Col. 4 line 62 – col. 5, line 14

After a final selection of finishes for all the objects in the 3D scene, the user may store the scene, including the selected surface finish data locally on the hard disk. The web browser may subsequently be pointed to the URL of another retailer or manufacturer. For example the web site of a paint manufacturer might be accessed. A new web page is then loaded into the left hand frame, to show a selection of different colour samples in different finishes (matt, gloss, silk etc.).

These may then be selected by the user for walls or other features of the interior scene shown in the right hand frame. As described previously, the corresponding surface finish data is imported into the 3D scene, which is modified accordingly, so that, for example, the walls are shown covered in the selected paint, together with the furniture shown in the fabrics selected at the first web site. Again, the left hand frame may include a pricing function to calculate the cost of a particular selection by the user, based, in this example, on the cost per unit volume of a selected paint, on the coverage required for the selected paint, and on the areas to which the paint is applied in the 3D scene.

Fisher does not teach or suggest the amended limitation, which comprises "downloading the object nodes in the set of visible and undefined object nodes from the server to the graphical client, wherein the graphical client renders the scene from the object nodes." Indeed, Fisher does not teach or suggest "a set of visible and undefined object nodes," or "downloading the object nodes in the set of visible and undefined object nodes from the server to the graphical client," or "the graphical client renders the scene from the object nodes." Instead, the cited portions of Fisher merely describe the storage and display of a selection of surface finishes for objects in a scene displayed in a web page.

Schmeidler and Berger fail to overcome the deficiencies of Fisher. Recall also that Schmeidler was cited only against dependent claims 8, 17 and 26 as teaching a stateless server, and Berger was cited only against dependent claims 9, 18 and 27 as teaching a client-side cache.

The references, taken individually or in combination, do not anticipate or render obvious Applicant's claimed invention. Moreover, the various elements of Applicant's claimed invention together provide operational advantages over the references. In addition, Applicant's invention solves problems not recognized by the references.

Thus, Applicant's attorney submits that independent claims 1, 10, and 19 are allowable over Fisher, Schmeidler, and Berger. Further, dependent claims 2-9, 11-18, and 20-27 are submitted to be allowable over Fisher, Schmeidler, and Berger in the same manner, because they are dependent on independent claims 1, 10, and 19, respectively, and thus contain all the limitations of the independent claims. In addition, dependent claims 2-9, 11-18, and 20-27 recite additional novel elements not shown by Fisher, Schmeidler, and Berger.

III. CONCLUSION

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited.

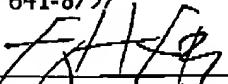
Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicant's undersigned attorney.

Respectfully submitted,

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